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UTILIZATION OF 5 DESERT HABITAT TYPES IN THE CALIFORNIA DESERT BY BY WINTERING BIRDS IN INYO & KERN COUNTIES, CA.

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by

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DESERT RIPARIAN WILLOWS. -- Location: California; Inyo and Kern Counties, Sand Canyon, in southern most extension of the Sierra Nevadas, 12 miles north on Highway 14 from intersection of State Highways 178 and 14, then 3.5 miles west on Brown Road; from center of Sec. 7, T 25 S, R 38 E, the plot extends up the canyon following the main stream approximately 2.3 km, Little Lake Quadrangle 1954, USGS. Continuity: Established Spring 1977. Size: 2.3 ha =5.68 acres. Description of Area: Canyon bottom with constant running stream. Area studied was approximately 2 to 3 m on each side of the stream, which was uniformly covered with willows. Adjacent to the willows were open areas of varying vegetation depending on location in the canyon. A dirt road followed the stream at varying distances all along the willow plot. Three intermittent streams and many gullys fed the stream after rains. Vegetation: See vegetation study of area. Topography: The stream cuts thru boulders and base rock at a fairly constant slope up the canyon from an altitude of about 3200 to 3760 ft. (976-1146 m) on the approximate 2.3 km of the length of the study area. The canyon runs from west to east starting in the Sierra Nevada and opening onto the Mojave Desert. Weather: Daytime temperatures ranged from 40° to 75° F. Record rains cancelled many days of field work in January and February.

JOSHUA TREE WOODLAND. -- Location: California; Inyo and Kern Counties, Sand Canyon, in southern most extension of the Sierra Nevadas, 12 miles north on Highway 14 from intersection of State Highways 178 and 14, then approximately 5 miles west on Brown Road: SE corner of the plot is about 50 m north of road (on map, the plot lies north of the "Y" formed by the intersection of the main stream bed and the intermittant stream from the south), would be SE¼ of Sec. 1, T 25 S, R 37 E if defined on map, Little Lake Quadrangle, 1954 USGS. Continuity: Established Spring 1977. Size: 11.9 Ha, 29.8 acres. Description of Area: Plot sparsely covered with small shrubs, 0.5 to 1 m high. Joshua Trees, *Yucca brevifolia*, scattered over plot. Concentrations of Joshua Trees occur near center and west boundary of plot. Plot bounded on east and west by similar scrub-Joshua Tree associations and north and south by rock outcroppings and a dirt road respectively. Topography: Plot is on south facing slope, cut by two shallow ravines. Substrate of decomposing granitic rock overlain with a thin layer of sand. Numerous boulders lie along southern boundary of plot. Vegetation: See the vegetation study of the area. Weather: Temperatures ranged from 40° to 75° F. Rain cancelled many days of field work in January and February. Coverage: Jan. 27, 28, 29, Feb. 18, 19, Mar. 11, 18, and 20. Total, 8 trips between 0530 and 0930 (Pacific Standard Time). Total man-hours: 16. Count: Western Bluebird, 8 (71, 28); House Finch, 4 (34, 14); Rock Wren, 4 (34, 13); Black-throated Sparrow, 2 (13,5);

DESERT SCRUB -- Location: California; Kern County, Sand Canyon, in southern most extension of the Sierra Nevadas, 12 miles north on Highway 14 from intersection of State Highways 178 and 14, and about 5 miles west on Brown Road; south branch of road crosses eastern half of plot. (On map, plot lies immediately west of the "Y" formed by the intersection of main streambed and intermittant stream from the south.) SE¼ of Sec. 1, T 25 S, R 37 E. Little Lake Quadrangle, 1954 USGS. Continuity: Established Spring 1977. Size: 12.5 ha = 31.25 Acres. Description of Area: Plot covered with shrubs 0.5 to 1.5 m in height. Density of shrubs decreases from east to west as slope increases. Dirt road cuts through plot from north to south near east boundary. Plot is bounded on north and east by ravines with permanent streams and good stands of willows. South and west boundaries are formed by rock outcroppings. Vegetation: See vegetation study of area. Topography: East facing slope, with severity of slope increasing from east to west. Plot very sandy, with rock outcroppings on south-western boundary. A steep-sided ravine cuts upper (western) half of plot. Weather: Daytime temperatures ranged from 40° to 75° F. Heavy rains occured intermittantly during the winter days. Coverage: Jan. 28, Feb. 4, 16, 19, 20, Mar. 12, 18, and 19. Total, 8 trips between 0530 and 0930 (Pacific Standard Time). Total man-hours: 16. Count: House Finch, 2 (19, 8); Rock Wren, 2 (16, 6);

Rabbitbrush Scrub -- Winter Bird Survey

RABBITBRUSH SCRUB -- Location: California; Inyo and Kern Counties, Sand Canyon, in southern most extension of the Sierra Nevadas, 12 miles north on Highway 14 from intersection of State Highways 178 and 14, then 3.5 miles west on Brown Road; from center of Sec. 7, T 25 S, R 38 E, the plot extends up the canyon following the main stream approximately 2.3 km, Little Lake Quadrangle 1954, USGS. Continuity: Established Spring 1977. Size: 6 Ha = 15 acres. Description of Area: Canyon bottom with constant stream. Area studied was immediately adjacent to willows where another plot was located. The plot was fairly uniformly covered with Rabbitbrush and occasional sagebrush. Plot was long and narrow (along stream) bounded on one side by willows and by desert scrub on the other. Vegetation: See vegetation study of area. Topography: Association occurs in flat floodplain areas along stream. Rocky, steep slopes covered by desert shrub rather than Rabbitbrush. Plot extends from altitude of about 3200 to 3760 ft. (976 - 1146 m) over a distance of 2.3 km. Canyon runs from west to east starting in the Sierra Nevada and opening onto the Mojave Desert. Weather: Daytime temperatures ranged from 40° to 75° F. Heavy rains occurred intermittantly throughout winter. Coverage: Jan. 21, 22, 27, Feb. 18, 19, 20, Mar. 11, and 12. Total, 8 trips between 0530 and 0930 (Pacific Standard Time). Total man-hours: 32. Count: Ruby-crowned Kinglet, 4 (73, 29); Scrub Jay, 3

Digger Pine Parkland - Winter Bird Survey

DIGGER PINE PARKLAND -- **Location:** California; Inyo County, Sand Canyon, in southern most extension of the Sierra Nevadas, 12 miles north on Highway 14 from intersection of State Highways 178 and 14, and about 6 miles west on Brown Road; northern boundary of plot is immediately adjacent to road. T 25 S, R 37 E, sections undefined, Little Lake Quadrangle, 1954 USGS. **Continuity:** Established Spring 1977. **Size:** 9.05 Ha = 22.63 acres. **Description of Area:** Relatively open park-like stand of Digger Pines with intermittant shrub understory. Bounded on the east by willows, on the north and south by Desert Scrub and on the west by a rather steep hill, sparsely covered with Pine. **Vegetation:** See vegetation study of area. **Topography:** Plot lies near confluence of an intermittant and a permanent stream. Area is relatively flat, with the exception of the southeast corner, where the terrain is more rugged. A rock outcropping extends from the central portion of the south boundary to the center of the plot. **Weather:** Daytime temperatures ranged from 40° to 75° F. Heavy rains occurred several times throughout winter monthes. **Coverage:** Jan. 29, Feb. 4, 18, 19, 20, Mar. 11, 12 and 19. Total, 8 trips between 0530 and 0930 (Pacific Standard Time). Total man-hours: 16. **Count:** Dark-eyed Junco, 8 (83, 33); Ruby-crowned Kinglet, 7 (76, 30); Stellers Jay, 4 (47, 19); Mountain Chickadee, 4 (41, 17); Common Flicker, 3 (33, 13); Scrub Jay, 3 (28,11); California Quail, 2 (25, 10); Canyon Wren, 2

Methods

was recorded simply as present (+). If the species was more common, average densities were used to estimate densities per square kilometer and per 100 acres.

For birds observed on the Desert Scrub, Joshua Tree and Digger Pine plots, data for each species was grouped into lateral distance intervals (eg. number of birds observed within 10 meters of transect, 10 to 20 meters from transect, etc.). The width of the transect strip used to determine the density of each species was that lateral distance from the transect line within which the density of the species was maximized. Densities were then estimated by the following formula:

$$D = \frac{n}{1 \times d \times 2} \times \frac{10^6 \text{ m}^2}{\text{km}^2}$$

Where D = density of birds (number per km^2); n = number of birds observed between the transect line and the outside edge of the last interval used in the density estimate; 1 = length of transect in meters; and d = perpendicular distance (in meters) from transect line to outside edge of last interval used in analysis (Balph, Stoddart, and Balph, 1977).

Balph, M. H., L. C. Stoddart, and D. F. Balph. 1977. A simple technique for analyzing bird transect counts. Auk 94: 606-607.